

## ABSTRACT

In a multimode radio, as many frequency dividers as the number of radio systems become necessary and the circuit scale  
5 of a frequency dividing section becomes large.

A frequency dividing section 22 is made up of a frequency divider 19 for dividing output of a local oscillator, a frequency divider 20 for dividing output of an in-phase local oscillation signal of the frequency divider 19, and a dummy  
10 circuit 21 connected to the output terminal of a quadrature local oscillation signal of the frequency divider 19. At the first frequency band operation time, output of the frequency divider 19 is used for modulation and demodulation and at the second frequency band operation time, output of the frequency  
15 divider 20 is used for modulation and demodulation. Although the frequency divider 19 is shared between the first and second frequency bands, the dummy circuit is made the same circuit as an input amplifier of the frequency divider 20 at the first frequency band operation time, so that the phase difference  
20 between the in-phase local oscillation signal and the quadrature local oscillation signal output by the frequency divider 19 can be kept. Accordingly, the frequency dividers are shared and combined for lessening the circuit scale.